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10/787,201	02/27/2004	Craig Allan Dunk	PI1646US00	4692
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PERRY + CURRIER INC. (FOR RIM) 1300 YONGE STREET SUITE 500 TORONTO, ON M4T-1X3 CANADA			HAILU, KIBROM T	
ART UNIT	PAPER NUMBER	2461		
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/787,201	Applicant(s) DUNK, CRAIG ALLAN
	Examiner KIBROM T. HAILU	Art Unit 2461

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 09 June 2010.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-44 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 02/27/2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed June 9, 2010 have been fully considered but they are not persuasive because the cited references in the previous office action disclose the claimed invention. Therefore, the finality of this office action is proper.

The Applicant's arguments on page 12-14 of the Remarks/Arguments are not persuasive, and the claim invention is not patentable in view of the following disclosure.

First, the Applicant argues that Chapman doesn't disclose determining quality of a link. The Examiner respectfully disagrees with the Applicant's argument because Chapman clearly discloses that a determination is done whether or not the condition of the Data Link is normal. In fact, the same as the current application, a failure of the link is declared after a transmission is attempted for a predetermined number of times without receiving an acknowledgement (see col. 6, lines 43-57; col. 6, line 65-col. 7, line 8).

Second, the Applicant argues neither Chapman nor claim 1 make any mention of a "transport layer" and infer that the examiner considers the link between Chapman's data layers at respective entities to be equivalent to the "first transport" recited in claim 1 and the OSI transport layer. The Examiner respectfully disagrees with the above argument. First of all, the Examiner reads the claims in light of the specification. Second, claim 3 clearly indicates that the first layer is layer four, which is nothing but transport layer. Third, Chapman doesn't have to mention all of the seven layers as they are inherently standard layers in communication. It is also inherent that, as its name also indicates, the transport layer is used in transporting data. Claim 1 describes that information is available within a second layer (layer two according to claim 3, which is also

called data link). Chapman discloses the same. That is, as explained and cited in the previous office action, Chapman discloses that the link information is within or via the data link. And it is clear that data link layer is different from other layers of the standard layers. Chapman doesn't have to say the data link layer is different from another layer because it is clear that it is different. Meaning, Chapman doesn't have to mention the transport layer as it is part of the seven standard layers and is not data link layer. In fact, the Examiner could have provided Reidel again but there is no point for the Examiner to cite a prior art that mentions transport layer because it is inherently known in the communication art.

Therefore, the Applicant's arguments are not persuasive and the claims are not patentable in view of the previously provided references and the above responses to the arguments.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1, 3, 10, 12, 16-19, 21-22, 28-29 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman et al. (US 5,926,468) in view of Zhang et al. (US 7,032,153 B1).

Regarding claims 1, 3, 17-19 and 21-22, Chapman discloses a method of delivering packets over a wireless link (Fig. 2) comprising the step of: transmitting at least one packet over said link via a first layer of a protocol stack employed by said link (Fig. 2-3; col. 4, lines 36-40, packets or frames are transmitted over the link or wireless communications medium 240. Note that it is inherent to transmit the packets over the transport layer of the OSI or seven layers, thus the name transport layer); determining, prior to transmitting further packets, whether transmission of said at least one packet failed (Figs. 5-6; col. 6, lines 35-41; col. 6, line 65-col. 7, line 5; col. 5, lines 19-21) repeating said transmitting and repeating said transmitting and determining steps until said transmitting step is determined failed (Figs. 5-6A; steps 520-540, 620-640; col. 6, lines 38-57; col. 6, line 65-col. 7, line 3, illustrating continue transmitting the frame until the link fails or fails to receive acknowledgement and the condition of the link is determined in response to failing of the transmitting step); determining, responsive to said transmitting step failing, a quality of said link at an electronic device by examining quality-of-service (QoS) information available within a second layer of said protocol stack, said second layer being a different layer in said protocol stack than said first layer (col. 1, line 65-col. 2, line 33; col. 2, lines 38-65; col. 6, lines 40-57, explain determining the condition or quality of the data link, which is different from the transport layer or layer 4 of the link or communication medium, by resetting the data link at the data link layer of the first entity or the transmitting device).

Chapman doesn't explicitly disclose developing a retry strategy for said transmitting step based on said determined quality, and retransmitting said at least one TCP packet according to said retry strategy.

Zhang teaches developing a retry strategy for said transmitting step based on said determined quality, and retransmitting said at least one TCP packet according to said retry strategy (col. 4, lines 40-62; col. 1, lines 20-21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use developing a retry strategy for said transmitting step based on said determined quality, and retransmitting said at least one packet according to said retry strategy as taught by Zhang into the communication of Chapman in order to reduce delay, use resources in an efficiently way and increase capacity of the system by designing or supporting per packet QoS instead of using static parameters.

Regarding claims 10, 12, 16, 28-29, and 31-32, the claims include the features corresponding to the subject matter mentioned above to the rejected claims 1, 3 and 17-22, and the same rejection is applied hereto.

5. Claims 2, 11, 20, 23, 30 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view of Zhang, and further in view of Haas et al. (US 6,912,387 B2).

As applied above, the modified network communication of Chapman discloses transmitting packets until failure, retransmit the packet when failed according to the retry strategy, and continue transmitting if the retransmission acknowledged. However, the modified communication of Chapman doesn't disclose terminating said method if said re-transmitting step fails; the service used for delivery of said packets comprises a GPRS (Radio service

communication) and a traditional PSTN type of telephone call, through the uses of appropriate PSTN gateways.

Haas teaches terminating said method if said re-transmitting step fails (Figs. 2 and 3; col. 4, line 50-col. 5, line 8; col. 6, lines 2-13) and the service used for delivery of said packets comprises a GPRS (Radio service communication) and a traditional PSTN type of telephone call, through the uses of appropriate PSTN gateways (see Fig. 1; col. 1, lines 13-31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the technique of Haas, which teaches ending the transmission when the retransmitted packet determined failure based on the retrying, and a GPRS (Radio service communication) and PSTN though the use of PSTN gateways into the modified communication of Chapman in order to avoid latency, and thus ensure reliability and throughput.

6. Claims 4-9, 13-15 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view of Zhang, and further in view of Gage (US 2004/0151136 A1).

Regarding claims 4-5, 7-9, 13-15 and 27, the modified communication of Chapman discloses determining quality of a link at data link layer (layer 2) and transmitting the packets via transport layer (layer 4) of a protocol stack to deliver packets.

The modified communication of Chapman doesn't explicitly disclose determining second quality of a second link; the qualities of the links is based on at least one of the measurements of reachability and availability of a given service used for delivery of said packets; determination of which link has a more desirable quality, the least financial cost, and transparent to performance of given service being used for carrying said packets.

Gage teaches determining second quality of a second link (paragraph [0029]; [0039]; [0042], etc, illustrates determining or measuring a quality of another link than the first one); the qualities of the links is based on at least one of the measurements of reachability and availability of a given service used for delivery of said packets (paragraph [0058]; claims 19 and 27); determination of which link has a more desirable quality, the least financial cost, and transparent to performance of given service being used for carrying said packets (paragraph [0029]; [0032]; [0038]) and select one of the links based on quality (paragraph [0010]; [0045], illustrates selecting a link with based on the predetermined quality value or criteria. Note also that since the modified communication of Chapman retry strategy is based on the quality, it is obvious for a skilled person in the art to realize selecting the link according retry strategies that are based on the qualities on the links).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate and determine the qualities of plurality of links based on reachability and/or availability, desirability or preference, financial cost, transparent to performance as taught by Gage into the modified communication of Chapman in order to allow the wireless device to more efficiently roam between various communication links without repeated terminations and re-establishments of the network connection.

Regarding claim 6, the modified communication of Chapman discloses the service includes VOIP (Zhang, col. 1, lines 24-26).

7. Claims 24-26, 34-36, 39-40 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view of Zhang, and further in view of Hyziak et al. (US 5,682,460).

As applied above, the modified communication of Chapman discloses retry strategy based on the determined quality of the link. However, the modified communication of Chapman doesn't explicitly disclose determined quality is a transmission profile, said transmission profile is a record of successful transmissions from said device or of signal strengths for a previous time period, said previous time period is 10 seconds.

Hyziak teaches determined quality is a transmission profile, said transmission profile is a record of successful transmissions from said device or of signal strengths for an identified portions of previous time period, said previous time period is 10 seconds (col. 4, line 62-col. 5, line 24, explains recording and reporting the status information such as successful delivery, failure, time of transmission or time stamp, elapsed time of transmission, quality of service, cost, acknowledgement and so on. Note also since Hyziak records the time of transmission (time stamp) and elapsed time of transmission, it is obvious for a person having skill in the art to realizing setting the previous transmission time to 10 seconds).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to develop a transmission profile by recording the transmission or information status in the identified portions of previous time period or an elapsed time period as taught by Hyziak and incorporate it into the modified communication of Chapman in order to permit a communication system subscriber to select a set of preferences and associated constraints to be used during the transmission of information within said communication system for reasons such as, but not limited to: cost, security, urgency, reporting options, disposition requests, and/or spectral efficiency, thus the subscriber or the sender may desire to route information over the network exhibiting the highest throughput.

8. Claims 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view of Zhang and Hyziak, and further in view of Upadrasta (US 6,771,594 B1).

Regarding claim 37, as applied above, the modified packet communication of Chapman discloses develop retry strategy and recording or profiling the transmission or information status. However, the modified communication of Chapman doesn't explicitly disclose computer processor configuring to develop said retry strategy as a mirror of said transmission profile.

Upadrasta teaches configuring to develop said retry strategy as a mirror of said transmission profile (col. 7, lines 48-50, illustrates the profile indicates number of retries and acknowledgements. In other words, retrying the TCP packets is according or mirror of the profile).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use retrying according to the user transmission profile as taught by Upadrasta into the modified packet communication of Chapman so that network conditions will be deemed to have improved and either reliable and/or non-reliable mode would be used or entered.

Regarding claim 38, which inherits claim 37, includes the features corresponding to the subject matter mentioned above to the rejected claim 27, and the same rejection is applied hereto.

9. Claims 39 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view of Zhang, and further in view of Itoh (US 7,486,634 B2).

As applied above, the modified communication of Chapman discloses developing a retry strategy based on the QoS of the link. However, the modified communication of Chapman doesn't disclose determining whether a signal strength has increased by a predetermined amount.

Itoh teaches determining whether a signal strength has increased by a predetermined amount (col. 18, lines 30-44).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use determining whether a signal strength has increased by a predetermined amount as taught by Itoh into the modified communication of Chapman in order to avoid an excessive energy usage that would otherwise uselessly consume the communication resources.

10. Claims 41 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view of Zhang and Hyziak, and further in view of Hatime (SU 2005/0165948 A1).

As applied above, the modified communication of Chapman discloses identifying portions of successfully recorded previous time period in the profile. However, the modified communication of Chapman doesn't disclose retransmitting at least one packet during the portions of the identified time period.

Hatime teaches retransmitting at least one packet during the portions of the identified time period (paragraph [0012]; [002]-[0023]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use retransmitting at least one packet during the portions of the identified time period as taught by Hatime into the modified communication of Chapman in order to reduce the time required to detect a lost packet and to efficiently retransmit any necessary packets in response to such detection, to permit interpolation/extrapolation techniques to predict an estimated future response, and to reduce network congestion on the network communication medium.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KIBROM T. HAILU whose telephone number is (571)270-1209. The examiner can normally be reached on Monday-Thursday 8:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D. Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2461

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kibrom T Hailu/

Examiner, Art Unit 2461

/Huy D Vu/

Supervisory Patent Examiner, Art Unit 2461